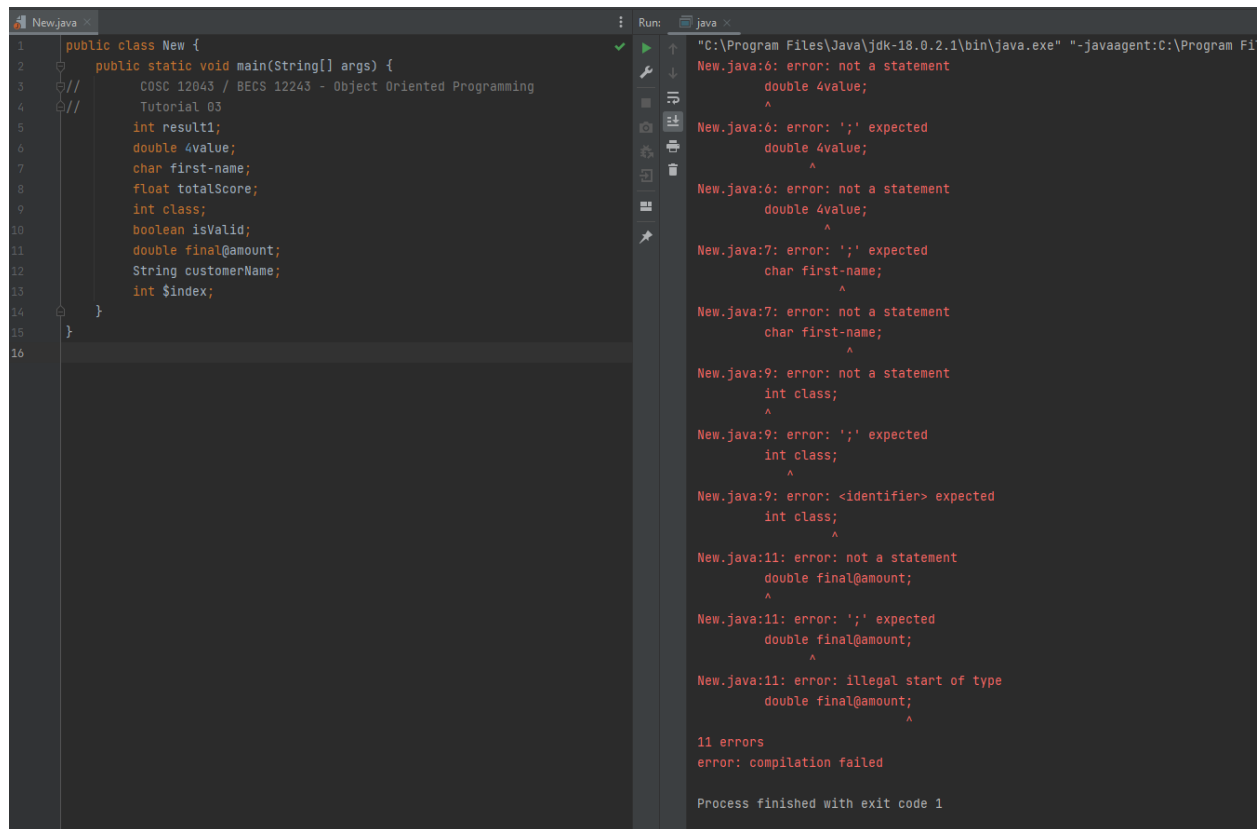


01.



The screenshot shows an IDE with a Java file named 'New.java'. The code is as follows:

```
1 public class New {  
2     public static void main(String[] args) {  
3         // COSC 12043 / BECS 12243 - Object Oriented Programming  
4         // Tutorial 03  
5         int result1;  
6         double 4value;  
7         char first-name;  
8         float totalScore;  
9         int class;  
10        boolean isValid;  
11        double final@amount;  
12        String customerName;  
13        int $index;  
14    }  
15 }  
16
```

The right pane shows the following compilation errors:

- New.java:6: error: not a statement  
double 4value;  
^
- New.java:6: error: ';' expected  
double 4value;  
^
- New.java:6: error: not a statement  
double 4value;  
^
- New.java:7: error: ';' expected  
char first-name;  
^
- New.java:7: error: not a statement  
char first-name;  
^
- New.java:9: error: not a statement  
int class;  
^
- New.java:9: error: ';' expected  
int class;  
^
- New.java:9: error: <identifier> expected  
int class;  
^
- New.java:11: error: not a statement  
double final@amount;  
^
- New.java:11: error: ';' expected  
double final@amount;  
^
- New.java:11: error: illegal start of type  
double final@amount;  
^

11 errors  
error: compilation failed  
Process finished with exit code 1

1. Ok
2. 1<sup>st</sup> character is a number
3. Unsupported characters for identifier( dash sign - )
4. Ok
5. 'class' is a Reserved keyword
6. Ok
7. Invalid character '@'
8. Ok
9. Ok



4.

i). Return type of main method not mentioned

```

Test.java x
//public class Test {
//    public static main (String [] args) {
//        System.out.println("Hello World Example");
//    }
//}

public class Test {
    public static void main (String [] args) {
        System.out.println("Hello World Example");
    }
}
    
```

Run: Test x  
 "C:\Program Files\Java\jdk-11.0.2\bin\java.exe"  
 Hello World Example  
 Process finished with exit code 0

ii).

Arithmetic Exception

```

Test.java x
1 //public class Test {
2 //    public static void main (String [] args) {
3 //        System.out.println(10/0);
4 //    }
5 //}

6 public class Test {
7     public static void main (String [] args) {
8         System.out.println(10/2);
9     }
10 }
11
12
    
```

Run: Test x  
 "C:\Program Files\Java\jdk-11.0.2\bin\java.exe"  
 5  
 Process finished with exit code 0

```

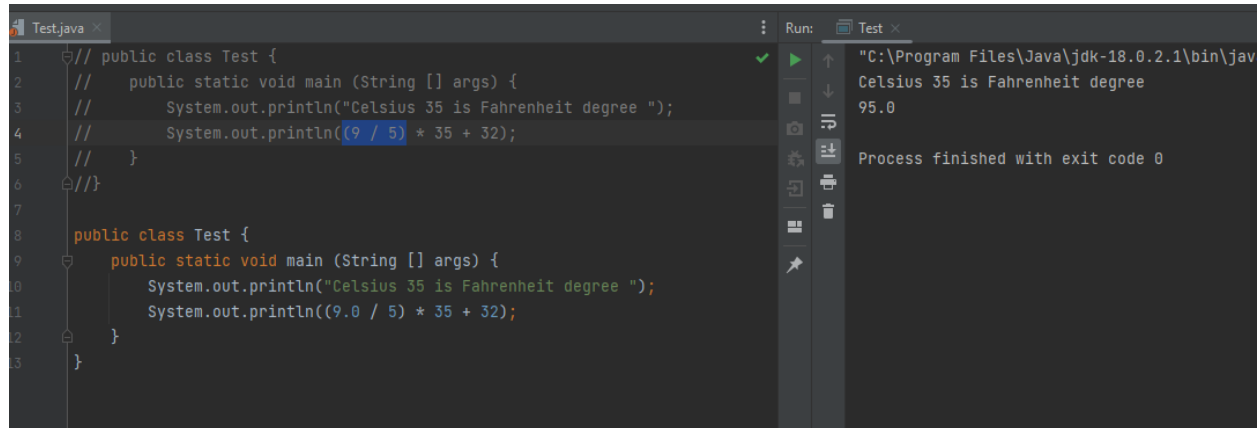
Test.java x
1 //public class Test {
2 //    public static void main (String [] args) {
3 //        System.out.println(10/0);
4 //    }
5 //}

6 public class Test {
7     public static void main (String [] args) {
8         try{
9             System.out.println(10/0);
10        } catch(Exception e){
11            System.out.println("ERROR \n" + e);}
12    }
13 }
14
    
```

Run: Test x  
 "C:\Program Files\Java\jdk-18.0.2.1\bin\java.exe"  
 ERROR  
 java.lang.ArithmeticException: / by zero  
 Process finished with exit code 0

iii).

Logical Error



```

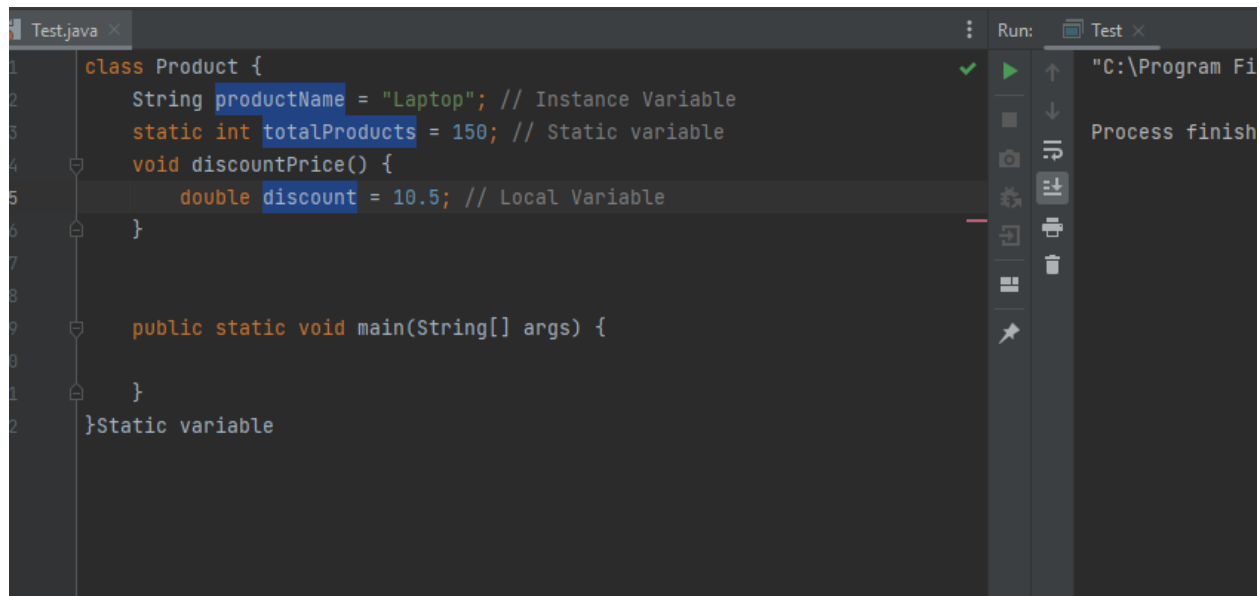
1 // public class Test {
2 //     public static void main (String [] args) {
3 //         System.out.println("Celsius 35 is Fahrenheit degree ");
4 //         System.out.println((9 / 5) * 35 + 32);
5 //     }
6 // }
7
8 public class Test {
9     public static void main (String [] args) {
10         System.out.println("Celsius 35 is Fahrenheit degree ");
11         System.out.println((9.0 / 5) * 35 + 32);
12     }
13 }
    
```

Run: Test ×

```

"C:\Program Files\Java\jdk-18.0.2.1\bin\jav
Celsius 35 is Fahrenheit degree
95.0
Process finished with exit code 0
    
```

5.



```

1 class Product {
2     String productName = "Laptop"; // Instance Variable
3     static int totalProducts = 150; // Static variable
4     void discountPrice() {
5         double discount = 10.5; // Local Variable
6     }
7
8
9     public static void main(String[] args) {
10
11     }
12 }Static variable
    
```

Run: Test ×

```

"C:\Program Fi
Process finish
    
```

.

.

6.

```

1 public class Test {
2     public static void main(String[] args) {
3
4         double tempDay1 = 23.5, tempDay2 = 25.3, tempDay3 = 22.8;
5
6         int averageTemp = 0;
7
8         int day1 = (int) tempDay1;
9
10        int day2 = (int) tempDay2;
11        averageTemp = (int)((day1 + day2 + tempDay3) / 3);
12        System.out.println("The average temperature is: " + averageTemp);
13    }
14 }
15

```

Run: Test  
 "C:\Program Files\Java\jdk-18.0.2  
 The average temperature is: 23  
 Process finished with exit code 0

7.

a).

```

1 public class Test {
2     public static void main(String[] args) {
3         int x = 300;
4         System.out.println("x is: " + x);
5         byte a = 15, b = 8;
6         byte sum = (byte) (a + b);
7         System.out.println("sum is: " + sum);
8         long largeNumber = 987654321L;
9         System.out.println("largeNumber is: " + largeNumber);
10        largeNumber = x;
11        short s = (short) largeNumber;
12        System.out.println("largeNumber is now " + largeNumber + " and s  

13        is: " + s);
14        boolean flag = false;
15        System.out.println("flag is: " + !flag);
16    }
17 }
18

```

Run: Test  
 "C:\Program Files\Java\jdk-18.0.2.1\bin\java.exe"  
 x is: 300  
 sum is: 23  
 largeNumber is: 987654321  
 largeNumber is now 300 and s is: 300  
 flag is: true  
 Process finished with exit code 0

b).

```

1 public class Test {
2     public static void main(String[] args) {
3         int num1 = 15;
4         int num2 = 4;
5         int num3 = 30;
6         System.out.println(num1 + num2);
7         System.out.println(num1 - num2);
8         System.out.println(num1 * num2);
9         System.out.println(num1 / num2);
10        System.out.println(num1 % num2);
11        System.out.println(num1 < num2 || num1 > num3);
12        System.out.println(num1 > num2 && num1 < num3);
13        int max = (num1 > num3) ? num1 : num3;
14        System.out.println("Max is: " + max);
15        int y = 5;
16        boolean isTrue = false;
17        System.out.println(y++);
18        System.out.println(++y);
19        System.out.println(y--);
20        System.out.println(--y);
21        System.out.println(!isTrue);
22    }
23 }

```

Run: Test ×

```

"C:\Program Files\Java\jdk-18.0.2.1\bin\java.exe"
19
11
60
3
3
false
true
Max is: 30
5
7
7
5
true
Process finished

```

8).

```

1 /*
2  * EC-2022/053
3  * Kavindu
4  * This program prints the student's information including their name, age, and marks in three subjects
5  * (Maths, Science, and History).
6  * It calculates the total and average marks for the student and display
7  */
8 public class Test {
9     public static void main(String[] args) {
10        // Initialize the student's first name, last name, age, and marks for three subjects.
11        String fname = "John"; // First name of the student
12        String lname = "Doe"; // Last name of the student
13        int age = 20; // Age of the student
14        float history_marks = 78.5f; // History marks of the student
15        float maths_marks = 85.5f; // Maths marks of the student
16        float science_marks = 92.0f; // Science marks of the student
17        // Print student information including name, age, marks in subjects, total marks, and average
18        // marks.
19        System.out.println("Student Information\n" +
20            "-----\n" +
21            "First Name: "+fname+" \n" + // Display first name
22            "Last Name: "+lname+" \n" + // Display last name
23            "Age: "+age+" \n" + // Display age
24            "Marks:\n" +
25            "\tMaths: "+maths_marks+" \n" + // Display maths marks
26            "\tScience: "+science_marks+" \n" + // Display science marks
27            "\tHistory: "+history_marks+" \n" + // Display history marks
28            "Total Marks: "+((maths_marks+science_marks+history_marks)/3)+" \n" + // Display
29            "total marks (sum of three subjects)
30            "Average Marks: "+((maths_marks+science_marks+history_marks)/3)+" \n"); // Display
31        // average marks
32    }
33 }

```

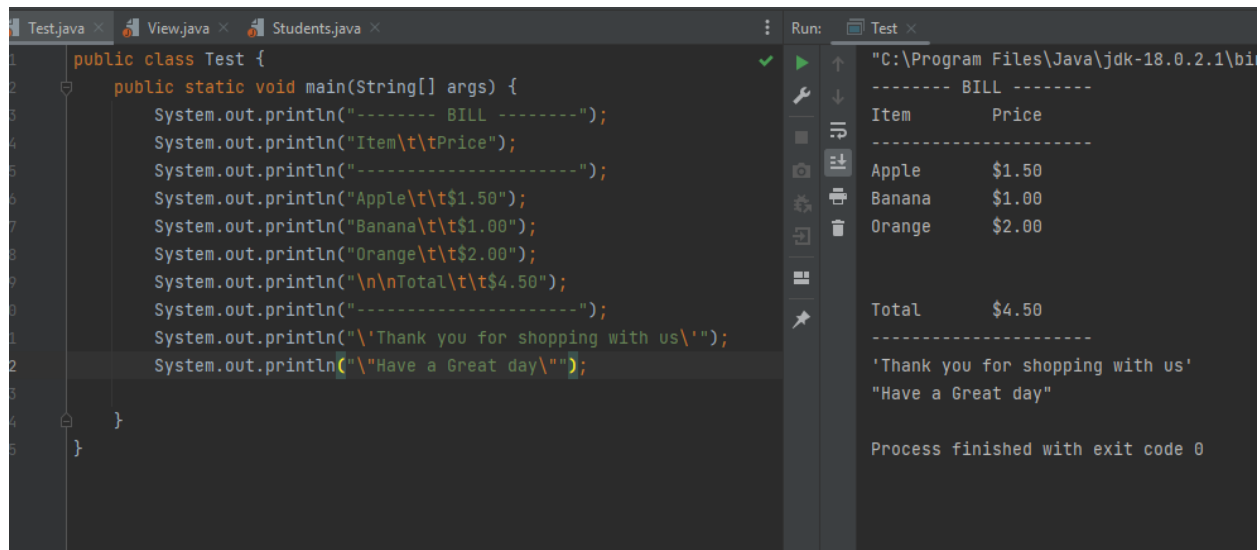
Run: Test ×

```

"C:\Program Files\Java\jdk-18.0.2.1\bin\java.exe"
Student Information
-----
First Name: John
Last Name: Doe
Age: 20
Marks:
Maths: 85.5
Science: 92.0
History: 78.5
Total Marks: 85.333336
Average Marks: 85.333336
Process finished with exit code 0

```

9.



The screenshot shows an IDE with three tabs: Test.java, View.java, and Students.java. The Test.java tab is active, displaying the following code:

```
1 public class Test {
2     public static void main(String[] args) {
3         System.out.println("----- BILL -----");
4         System.out.println("Item\t\tPrice");
5         System.out.println("-----");
6         System.out.println("Apple\t\t$1.50");
7         System.out.println("Banana\t\t$1.00");
8         System.out.println("Orange\t\t$2.00");
9         System.out.println("\n\nTotal\t\t$4.50");
10        System.out.println("-----");
11        System.out.println("'Thank you for shopping with us'");
12        System.out.println("\\"Have a Great day\\");
13    }
14 }
```

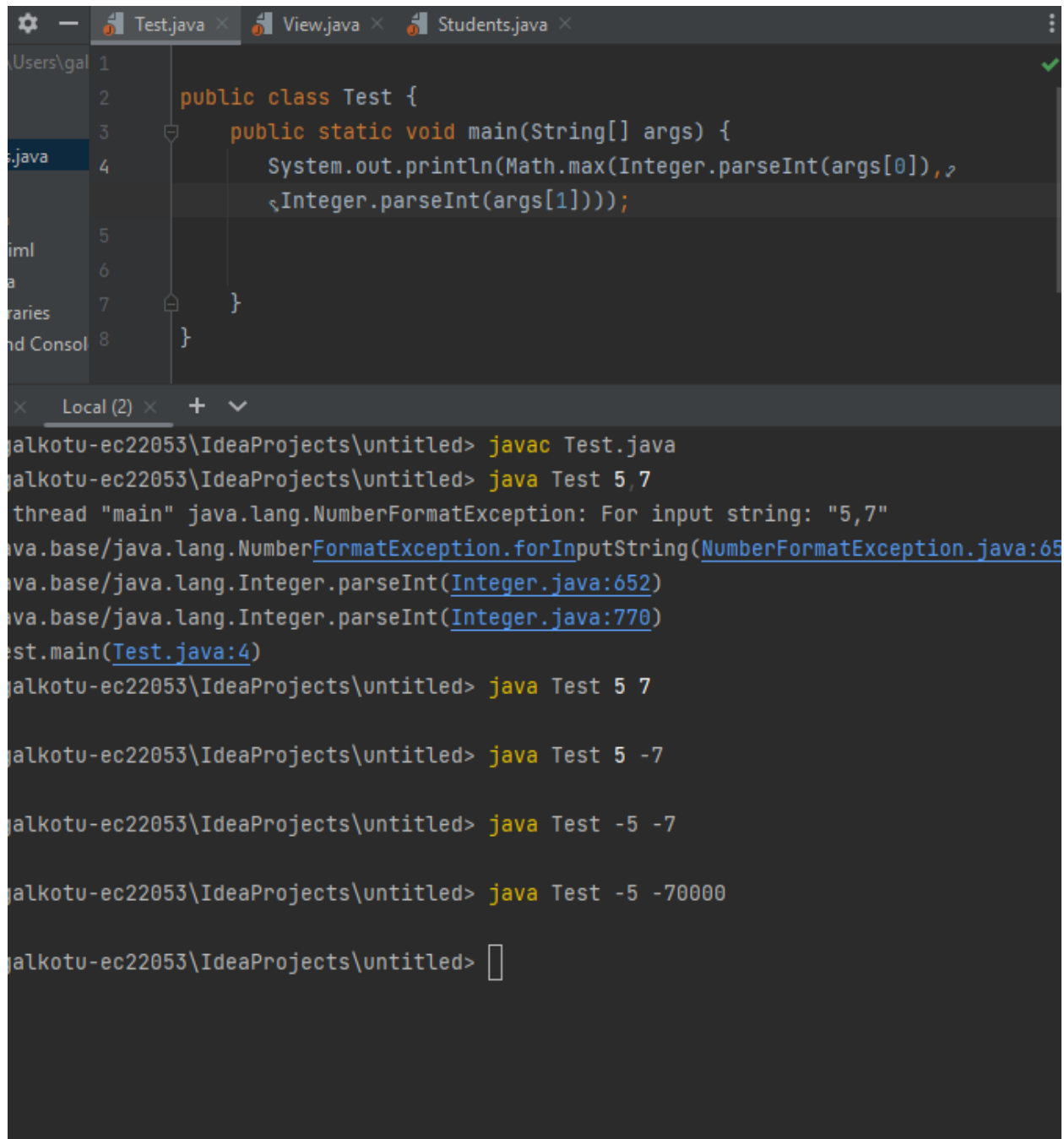
The Run console on the right shows the output of the program:

```
"C:\Program Files\Java\jdk-18.0.2.1\bin\java.exe"
----- BILL -----
Item      Price
-----
Apple     $1.50
Banana    $1.00
Orange    $2.00

Total     $4.50
-----
'Thank you for shopping with us'
'Have a Great day'

Process finished with exit code 0
```

10.



```
Test.java x View.java x Students.java x
1
2 public class Test {
3     public static void main(String[] args) {
4         System.out.println(Math.max(Integer.parseInt(args[0]),
5                                     Integer.parseInt(args[1])));
6     }
7 }
8

Local (2) x + v
galkotu-ec22053\IdeaProjects\untitled> javac Test.java
galkotu-ec22053\IdeaProjects\untitled> java Test 5 7
thread "main" java.lang.NumberFormatException: For input string: "5,7"
ava.base/java.lang.NumberFormatException.forInputString(NumberFormatException.java:65)
ava.base/java.lang.Integer.parseInt(Integer.java:652)
ava.base/java.lang.Integer.parseInt(Integer.java:770)
est.main(Test.java:4)
galkotu-ec22053\IdeaProjects\untitled> java Test 5 7
galkotu-ec22053\IdeaProjects\untitled> java Test 5 -7
galkotu-ec22053\IdeaProjects\untitled> java Test -5 -7
galkotu-ec22053\IdeaProjects\untitled> java Test -5 -70000
galkotu-ec22053\IdeaProjects\untitled> 
```